USSR

BOGOMOL'NYY, YE. B., et al., Yadernaya Fizika, Vol 16, No 1, Jul 72, pp 129-142

→ 2μ and with the necessity for compensating for it with a high degree of accuracy. Experimental observation of the anomalous muon-pion interaction was complicated by two circumstances: the smallness of the anomalous cross section ($\sim 10^{-34}$ cm^2) and the large value of the cross sections for background processes which exceed the anomalous processes by a factor of 10-1000. Elastic backscattering of the μ-meson by a proton at an energy of ~1 Gev, measurement of $(g - 2)$ of the μ-meson, and a study of the $\mu p \to \mu p \pi^0$ process at $E_\mu \geq 10$ Gev are recommended as the most sensitive methods for observing this interaction. It is proposed that $\mathrm{Im}M^{(2\gamma)}_{K\to 2\mu}$ is compensated not by the contribution of the 3π-intermediate state but by the contribution of other intermediate states arising in $K^0_L \to \mu^+\mu^-$ decay, such as 2πγ. A discussion of the consequences of possible 2πγ - 2μ-anomalous interaction will be the subject of a later paper.

2/2

USSR

DOLGOV, A. D., ZAKHAROV, V. I., and OKUN', L. B.

UDC 539.12.01

"$K_L \rightarrow 2\mu$ Decay"

Moscow, Uspekhi Fizicheskikh Nauk, vol 107, No 4, 1972, pp 537-557

Abstract: This paper is in the nature of a review of the vexatious problem of the decay of the K_L meson. There has been a great deal of contradictory experimental and theoretical data concerning this problem, and the authors review the experimental and theoretical evidence thoroughly, questioning it as they go. They question the reliability of the experimental findings -- some of which have led to the negative result that no decay was detected -- and apply equally radical examination to the reliability of the various theories. After this introductory discussion, the authors examine a mathematical expression of the decay, as found from a highly accurate experiment, and consider its consequences. Then, to plot an exact path through this confusion of doubtful facts and erratic theory, they carefully analyze the new interactions of known particles arising from the decay, the new particles and particularly the new light particles that have been found, and the theory of conservation as applied to the decay in addition to apparent violations of the theory. In discussing this last, the authors touch

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UDC: 537.31

USSR

OKUN', L. S., KAGANOVSKIY, I. P., LEPIKHOVA, Ye. Ye., ZATULOVSKIY, L. M., CHAYKIN, P. M., LEVINZON, D. I., All-Union Scientific Research Institute of Electrothermal Equipment

"Investigation of Resistivity Distribution in a Single Crystal Germanium Strip by the Single-Probe Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 614-618

Abstract: The distribution of resistivity is studied by single-probe measurements on a single crystal germanium strip with spacing down to 10 μ. The strips were grown by the Stepanov method in directions <110> and <112>, the plane of the strip being (111). The specimens were doped with Ga and Sb for *p*- and *n*-conductivity respectively. It was found that the longitudinal nonhomogeneity is greater than the transverse nonhomogeneity, and that both types of nonhomogeneity increase with a reduction in the discrete measurement step. The distribution of nonhomogeneity in the resistivity of longitudinal specimens is basically periodic with a periodicity of 150-400 μ, depending on the conditions of growth. In transverse specimens the distribution was found to be more random with a periodicity of

1/2

USSR

DOLGOV, A. D., DOLGOLENKO, A. G., ZAKHAROV, V. I., OKUN', L. B., Institute of Theoretical and Experimental Physics, State Committee on Utilization of Nuclear Power

"$K_L \to 2\mu$ Decay and the Possibility of Existence of a Light Vector Meson"

Moscow, Yadernaya Fizika, Vol 16, No 2, Aug 72, pp 376-383

Abstract: The authors discuss the hypothesis which holds that the existence of a light vector meson X_0 is responsible for the failure of experiments set up to detect $K_L \to 2\mu$ decay. The analysis shows that existence of a X-meson with the properties necessary for compensating the two-photon contribution to $\mathrm{Im}\, F(K_1 \to 2\mu)$ contradicts experiment. This and other difficulties seem to rule out the existence of such a particle. If the hypothetical X-meson does exist, it would have to decay into new light neutral particles or undergo interaction $X\gamma\mu\bar{\mu}$, both unlikely possibilities. The authors thank V. V. Barmin, V. S. Demidov, A. G. Meshkovskiy, N. N. Nikolayev and V. A. Shebanov for constructive criticism.

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USSR

BOGOMOL'NYY, YE. B., DOLGOV, A. D., ZAKHAROV, V. I., OKUN', L. B., SHIFMAN, M. A., SHMATIKOV, M. ZH., Institute of Theoretical and Experimental Physics of the State Committee for the Use of Atomic Energy

"$K_L^0 \to \mu^+\mu^-$ and the Anomalous Interaction of Muons With Hadrons"

Moscow, Yadernaya Fizika, Vol. 16, No. 1, Jul 72, pp 129-142

Abstract: The possible contribution of the 3π-intermediate state in the imaginary part of the amplitude of $K_L^0 \to \mu^+\mu^-$ decay and the possibility of the existence of anomalous muon-pion interaction which could balance the imaginary part of the amplitude of $K_L^0 \to \mu^+\mu^-$ decay arising through the 2γ-intermediate state are discussed. It is noted that the existence of an anomalously strong pion-muon interaction could resolve the contradiction between the experimental results of Clark, Field, et al and the theory, but it is shown that the anomalous interactions $\pi^0 - 2\mu$ and $3\pi - 2\mu$ do not contradict existing experimental data on elastic and inelastic scattering of a muon by a nucleon, on the generation of muon pairs by pions, and by data on (g - 2) for the muon. It is noted that in this approach series difficulties arise which are associated with the very large value of Re $A_{KL}(3\pi) \to$

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USSR

BOGOMOL'NYY, YE. B., et al., Yadernaya Fizika, Vol 16, No 1, Jul 72, pp 129-142

→ 2μ and with the necessity for compensating for it with a high degree of accuracy. Experimental observation of the anomalous muon-pion interaction was complicated by two circumstances: the smallness of the anomalous cross section ($\sim 10^{-34}$ cm^2) and the large value of the cross sections for background processes which exceed the anomalous processes by a factor of 10-1000. Elastic backscattering of the μ-meson by a proton at an energy of ~1 Gev, measurement of $(g - 2)$ of the μ-meson, and a study of the $\mu p \to \mu p \pi^0$ process at $E_\mu \geq 10$ Gev are recommended as the most sensitive methods for observing this interaction. It is proposed that $\mathrm{Im}M_{K\to 2\mu}(2\gamma)$ is compensated not by the contribution of the 3π-intermediate state but by the contribution of other intermediate states arising in $K_L^0 \to \mu^+\mu^-$ decay, such as 2πγ. A discussion of the consequences of possible 2πγ - 2μ-anomalous interaction will be the subject of a later paper.

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USSR

UDC 539.12.01

DOLGOV, A. D., ZAKHAROV, V. I., and OKUN', L. B.

"$K_L \rightarrow 2\mu$ Decay"

Moscow, Uspekhi Fizicheskikh Nauk, Vol 107, No 4, 1972, pp 537-557

Abstract: This paper is in the nature of a review of the vexatious problem of the decay of the K_L meson. There has been a great deal of contradictory experimental and theoretical data concerning this problem, and the authors review the experimental and theoretical evidence thoroughly, questioning it as they go. They question the reliability of the experimental findings -- some of which have led to the negative result that no decay was detected -- and apply equally radical examination to the reliability of the various theories. After this introductory discussion, the authors examine a mathematical expression of the decay, as found from a highly accurate experiment, and consider its consequences. Then, to plot an exact path through this confusion of doubtful facts and erratic theory, they carefully analyze the new interactions of known particles arising from the decay, the new particles and particularly the new light particles that have been found, and the theory of conservation as applied to the decay in addition to apparent violations of the theory. In discussing this last, the authors touch

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USSR

DOLGOV, A. D. et al, Uspekhi Fizicheskikh Nauk, vol 107, No 24, 1972, pp 537-557

on the unitarity condition, through which a limitation on the probability of the $K_L \rightarrow \mu^+\mu^-$ decay is obtained. With regard to the question of the existence of new decay particles, they review the basic limiting conditions such new particles must satisfy. Finally, in their efforts to verify the apparent contradictions to classical physics theory, they reconsider the mathematical decay expression already mentioned for an examination of the theoretical principles on which it is based. They conclude by thanking Ye. B. Bogomol'nyy, G. V. Grigoryan, N. N. Nikolayev, M. V. Terent'yev, M. A. Shifman, and M. Zh. Shmatikov, colleagues who helped clarify many problems, as well as V. B. Berestetskiy, B. L. Ioffe, I. Yu. Kobzarev, M. S. Marinov, S. G. Matinyan, B. M. Pontekorvo, I. V. Chuvilo, I. S. Shapiro, and Ye. P. Shabalin for having read the review and for their useful comments on it. In an appendix, they mathematically develop the contribution of the two-photon state to the absorptive part of the $K_2 \rightarrow 2\mu$ decay amplitude, and the unitarity condition as applied to K_L meson decays.

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USSR UDC: 537.31

OKUN', L. S., KAGANOVSKIY, I. P., LEPIKHOVA, Ye. Ye., ZATULOVSKIY, L. M., CHAYKIN, P. M., LEVINZON, D. I., All-Union Scientific Research Institute of Electrothermal Equipment

"Investigation of Resistivity Distribution in a Single Crystal Germanium Strip by the Single-Probe Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 614-618

Abstract: The distribution of resistivity is studied by single-probe measurements on a single crystal germanium strip with spacing down to 10 μ. The strips were grown by the Stepanov method in directions <110> and <112>, the plane of the strip being (111). The specimens were doped with Ga and Sb for *p*- and *n*-conductivity respectively. It was found that the longitudinal nonhomogeneity is greater than the transverse nonhomogeneity, and that both types of nonhomogeneity increase with a reduction in the discrete measurement step. The distribution of nonhomogeneity in the resistivity of longitudinal specimens is basically periodic with a periodicity of 150-400 μ, depending on the conditions of growth. In transverse specimens the distribution was found to be more random with a periodicity of 1/2

UDC 539.12.01

USSR

DOLGOV, A. D., ZAKHAROV, V. I., and OKUN', L. B.

"$K_L \rightarrow 2\mu$ Decay"

Moscow, Uspekhi Fizicheskikh Nauk, vol 107, No 4, 1972, pp 537-557

Abstract: This paper is in the nature of a review of the vexatious problem of the decay of the K_L meson. There has been a great deal of contradictory experimental and theoretical data concerning this problem, and the authors review the experimental and theoretical evidence thoroughly, questioning it as they go. They question the reliability of the experimental findings -- some of which have led to the negative result that no decay was detected -- and apply equally radical examination to the reliability of the various theories. After this introductory discussion, the authors examine a mathematical expression of the decay, as found from a highly accurate experiment, and consider its consequences. Then, to plot an exact path through this confusion of doubtful facts and erratic theory, they carefully analyze the new interactions of known particles arising from the decay, the new particles and particularly the new light particles that have been found, and the theory of conservation as applied to the decay in addition to apparent violations of the theory. In discussing this last, the authors touch

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APPROVED FOR RELEASE: 08/09/2001 CIA-RDP86-00513R002202310005-6"

USSR

DOLGOV, A. D. et al, Uspekhi Fizicheskikh Nauk, vol 107, No 24, 1972, pp 537-557

on the unitarity condition, through which a limitation on the probability of the $K_L \rightarrow \mu^+\mu^-$ decay is obtained. With regard to the question of the existence of new decay particles, they review the basic limiting conditions such new particles must satisfy. Finally, in their efforts to verify the apparent contradictions to classical physics theory, they reconsider the mathematical decay expression already mentioned for an examination of the theoretical principles on which it is based. They conclude by thanking Ye. B. Bogomol'nyy, G. V. Grigoryan, N. N. Nikolayev, M. V. Terent'yev, M. A. Shifman, and M. Zh. Shmatikov, colleagues who helped clarify many problems, as well as V. B. Berestetskiy, B. L. Ioffe, I. Yu. Kobzarev, M. S. Marinov, S. G. Matinyan, B. N. Pontekorvo, I. V. Chuvilo, I. S. Shapiro, and Ye. P. Shabalin for having read the review and for their useful comments on it. In an appendix, they mathematically develop the contribution of the two-photon state to the absorptive part of the $K_2 \rightarrow 2\mu$ decay amplitude, and the unitarity condition as applied to K_L meson decays.

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USSR

OKUN', L. S., KAGANOVSKIY, I. P., LEPIKHOVA, Ye. Ye., ZATULOVSKIY, L. M., CHAYKIN, P. M., LEVINZON, D. I., All-Union Scientific Research Institute of Electrothermal Equipment

UDC: 537.31

"Investigation of Resistivity Distribution in a Single Crystal Germanium Strip by the Single-Probe Method"

Moscow, Izv. AN SSSR: Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 614-618

Abstract: The distribution of resistivity is studied by single-probe measurements on a single crystal germanium strip with spacing down to 10 μ. The strips were grown by the Stepanov method in directions <110> and <112>, the plane of the strip being (111). The specimens were doped with Ga and Sb for *p*- and *n*-conductivity respectively. It was found that the longitudinal nonhomogeneity is greater than the transverse nonhomogeneity, and that both types of nonhomogeneity increase with a reduction in the discrete measurement step. The distribution of nonhomogeneity in the resistivity of longitudinal specimens is basically periodic with a periodicity of 150-400 μ, depending on the conditions of growth. In transverse specimens the distribution was found to be more random with a periodicity of

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USSR

OKUN', L. S. et al., IAN SSSR: Ser. Fiz., V 36, 1972, pp 614-618

100-125 μ. Fine impurity bands of about 10 μ were observed which are apparently due to the periodicity of the crystallization process occasioned by liberation of the latent heat of fusion. The higher homogeneity observed in *p*-germanium is attributed to the weaker relation between the effective coefficient of distribution of Ga and periodic fluctuations in growth rate.

2/2

UDC: 621.315.592

USSR

MEN'SHIKOVA, V. A., OKUN', L. S., ZATULOVSKIY, L. M., CHAYKIN, P. M., FRIMER, A. I., All-Union Scientific Research Institute of Electrothermal Equipment

"Feasibility of Making Photodiodes Based on Single Crystal Germanium Strips Grown by the Stepanov Method"

Moscow, Izv. AN SSSR, Ser. Fizicheskaya, Vol 36, No 3, Mar 72, pp 525-528

Abstract: A study is made of the possibility of growing gallium arsenide epitaxially on germanium single crystal strips, and producing photodiodes from the resultant structures. The single crystal germanium strip was grown by the Stepanov method, using a floating shaper and a seed holder on a flexible suspension. A gas-transport reaction in an open tube was used for growing the epitaxial layer of gallium arsenide. The *pn* junction was formed by arsenic diffusion. Mesa photodiodes were made by photolithography. It was found that the integral sensitivity of photodiodes based on single crystal strips is greater than that of diodes based on ordinary germanium. This is attributed to the thinner epitaxial layer of GaAs since losses of light are proportional to the thickness of this layer. This is confirmed by spectral characteristics.

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UNCLASSIFIED PROCESSING DATE--30OCT70

1/2 027

TITLE--HOMOGENEITY OF STRONGLY DOPED N INDIUM ANTIMONIDE SINGLE CRYSTALS -U-

AUTHOR-(02)-DASHEVSKIY, M.YA., KUN, L.S.

COUNTRY OF INFO--USSR

SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(4), 739-44

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--INDIUM ANTIMONIDE SEMICONDUCTOR, ELECTRON DENSITY, SINGLE CRYSTAL PROPERTY, CRYSTAL IMPURITY, IMPURITY LEVEL, PARTICLE DISTRIBUTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--2000/1212 STEP NO--UR/0363/70/006/004/0739/0744

CIRC ACCESSION NO--AP0124866

UNCLASSIFIED

2/2 027 UNCLASSIFIED PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0124866

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. DATA WERE OBTAINED CONCERNING THE HOMOGENEITY OF HEAVILY DOPED INSB CRYSTALS WITH ELECTRON CONCNS. SMALLER THAN OR EQUAL TO 1.5 TIMES 10 PRIME19 CM PRIME3. THERE ARE NO DATA AVAILABLE IN THE LITERATURE ON HOMOGENEITY OF INSB SINGLE CRYSTALS WITH AN ELECTRON CONCN. LARGER THAN 5 TIMES 10 PRIME18 CM PRIME3. THE SINGLE CRYSTALS WERE DOPED WITH TE OR WITH INTE AND WERE GROWN IN THE A (111) DIRECTION. IN THE CHANNEL REGION, ASSOCD. WITH THE "FACE EFFECT", BESIDES THE PREVIOUSLY KNOWN LAMELLAR (TRANSVERSE) HETEROGENEITY, LONGITUDINAL HETEROGENEITY WAS ALSO OBSD., IN THE FORM OF CLUSTERS OF POINT ETCH FIGURES PIERCING THE SINGLE CRYSTAL VERTICALLY ("DROP EFFECT"). AT SMALLER THAN OR EQUAL TO 8 TIMES 10 PRIME18 CM PRIME3 (UNDER GIVEN GROWING CONDITIONS), THE REGION OUTSIDE THE CHANNEL IS ELEC. MORE HOMOGENEOUS, BEING ASSOCD. WITH THE "FACE EFFECT", WHEREBY IN THIS REGION THE HOMOGENEITY IS PRACTICALLY CONST. WITH INCREASED TE CONC. THE HETEROGENEOUS DISTRIBUTION OF DONOR ADDNS. IN INSB SINGLE CRYSTALS, ASSOCD. WITH THE "FACE EFFECT", CAN BE BROUGHT OUT BY TRANSMISSION CURVES AND CAN BE DETD. QUANT. FROM THE DISPLACEMENT OF THE END OF THE ABSORPTION BAND. FACILITY: MOSK. INST. STALI. SPLAVOV, MOSCOW, USSR.

UNCLASSIFIED

UDC 546.682'86:548.55

USSR

DASHEVSKIY, M. YA., and OKUN', L. S., Moscow Institute of Steel and Alloys, Moscow, Ministry of Higher and Secondary Specialized Education, RSFSR

"Study of Homogeneity of Strongly Alloyed n-Type InSb Single Crystals"

Moscow, Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 739-744

Abstract: The article presents data on the homogeneity of strongly alloyed InSb crystals with an electron concentration of up to $1.5 \cdot 10^{19}$ cm^{-3}. The single crystals were alloyed with tellurium or indium telluride and grown in the direction A <111>. The electric, chemical and optical homogeneities of the single crystals were studied. The homogeneity was studied in the region of the channel connected with the "face effect" and outside it. It was found that this region, in addition to the previously known laminar (transverse) inhomogeneity, also displays previously unknown longitudinal inhomogeneity in the form of agglomerations of point etch-figures which vertically pierce the single crystal (the so-called "drop effect"). The chemical in-

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USSR

DASHEVSKIY, M. YA., and OKUN', L. S., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 739-744

homogeneity in this region increases with increased tellurium concentration, mainly as a result of the "drop effect." No chemical inhomogeneity was found in the region outside the channel connected with the "face effect." Up to a concentration of $8 \cdot 10^{18}$ cm^{-3} (under given growing conditions) this region is electrically more homogeneous, with practically no change in homogeneity with an increase in the tellurium concentration. In InSb single crystals the inhomogeneous distribution of donor additions connected with the "face effect" can be found from transmission curves and quantitatively estimated from the absorption edge shift.

In general, it appears that the production of homogeneous single crystals should be based on the growth of unfaceted single crystals under conditions which are close to equilibrium and which assure the production of single crystals of constant composition.

2/3

USSR

DASHEVSKIY, M. YA., and OKUN', L. S., Izvestiya Akademii Nauk SSSR -- Neorganicheskiye Materialy, Vol 6, No 4, Apr 70, pp 739-744

The authors thank I. P. KAGANOVSKIY for making it possible to measure the resistivity distribution of the InSb single crystals on the device created by him, as well as for taking part in the discussion of the findings; and also thank V. S. IVLEV and I. A. DOLGIKH for their assistance.

3/3

USSR

UDC 621.394.147:534.782

KHOMICH, I. F. and OKUN', V. A.

"Efficiency of Correcting Codes Used in Discrete Form Speech Transmission"

Moscow, Elektrosvyaz', No. 9, 1970, pp 19-23

Abstract: A discussion of the use of parametric methods of compressing the speech spectrum to convert it into a sequence of binary pulses is given. The compression unavoidably entails a reduction of the noise immunity of the signal. However, there are two ways of improving the noise immunity: one is to raise the speech transmission speed to the level of the transmission speed of the binary pulses if the latter exceeds the former; the other is to use correcting codes for correcting errors by employing the excess of binary pulse transmission speeds over speech transmission speeds to transmit correction symbols. Although there is insufficient data at present to decide which of these two methods is better, the efficiency of using correcting codes can be estimated for the particular case of binary pulse transmission speeds of 2000 bits per second by comparing the noise immunity of low speech compression vocoders with speech transmission speeds of 2000 bits per second with high compression vocoders with speeds of 1000 bits per second using noise-immune coding. This method is demonstrated.

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USSR

UDC 615.616.24-003.
656.6

OKUN', M. I., YEN'YAKOVA, P. A.

"Problem of Fibrogen and Nature of Phospholipids of the Lungs in the Presence of Silicosis"

V sb. Materialy XXI-XXII plenumov Resp. komis. po bor'be s silikozom (Materials of the 21st to the 22nd Plenums of the Republic Commission on Controlling Silicosis -- Collection of Works, Kiev, Naukova dumka, 1972, pp 91-97 (from RZh--Farmakologiya, Khimioterapevticheskiye Sredstva, Toksikologiya, No 3, Mar 73, Abstract No 3.54.871)

Translation: From the lungs of rats in the early (1.5-3 months after intratracheal spraying with powdered quartz) or late (4-5 months after spraying with tridymite) stage of silicosis, phospholipids were isolated. These phospholipids were administered intratracheally to intact rats 3-8 times every 2 to 5 days. After 1.5 months, an increase in the collagen content in the lungs focal swelling of the alveolar septa, a phagocytic reaction, and centers of cellular reaction from cells with large oblong nuclei were detected. In the lungs of one of the animals, a section of fibrous-cellular structure was detected under the pleura. The administration of phospholipids from the lungs of intact animals did not

USSR

OKUN', M. I., YEN'YAKOVA, P. A., Materialy XXI-XXII plenumov Resp. komis. po bor'be s silikozom, 1972, pp 91-97

cause pathological alterations. The conclusion was drawn of the acquisition of fibrogenic activity by the phospholipids of lungs with silicosis. The bibliography has 12 entries. USSR, Donetsk, Institute of Hygiene of Labor and Professional Disease.

USSR UDC: 621.315.3

KOPYLOV, K. I., MENCHIKOV, L. P., OKUN', Ye. L., SMIRNOV, V. M., SHERSTOBITOV, A. Ye.

"An Installation for Making Microwires in Glass Insulation"

Elektron. tekhnika. Nauchno-tekhn. sb. Radiokomponenty (Electronic Technology. Scientific and Technical Collection. Radio Components), 1970, vyp. 1, pp 134-143 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5V419)

Translation: The authors present the results of development of specialized installations for casting type ULP-5, ULP-6 and ULP-6M microwires in glass insulation. The schematic diagrams of the installations are described and their technical characteristics are given. Resumé.

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USSR

UDC 541.183

TANUTROV, I. N., KOSTENETSKIY, V. P., MOISEYEV, G. K., OKUNEV, A. I.

"Density, Surface Tension and Viscosity of Na_2SO_4-$CaSO_4$ Melts"

Tr. In-ta Elektrokhimii. Ural'sk. nauch. tsentr. AN SSSR (Works of the Institute of Electrochemistry. Ural Scientific Center, Academy of Sciences of the USSR), 1971, vyp. 17, pp 41-44 (from RZh-Khimiya, No 1 (I), Jan 72, Abstract No 1B1260)

Translation: Measurements are made of the temperature and concentration dependence of density (ρ), surface tension (σ) and viscosity (μ) of melts of Na_2SO_4-$CaSO_4$ at 960-1200°C. It is found that in the concentration range of 0-60 mol % $CaSO_4$, ρ and σ decrease linearly with temperature, while μ decreases exponentially. The behavior of surface tension and adsorption with concentration indicates the probability of existence of $[NaSO_4]^-$ anions in Na_2SO_4-$CaSO_4$ melts (primarily on the surface), while the viscosities and energy of activation of viscous flow indicate the presence of $[Ca_x(SO_4)_y]^{n}$ anions (chiefly within the body of the melt). Resume.

1/1

UNCLASSIFIED PROCESSING DATE--27NOV70

1/2 007

TITLE--SODIUM SULFIDE PRODUCTION -U-

AUTHOR-(02)-OKUNEV, A.I., KOSHKAROV, V.YA.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 264,362

REFERENCE--OTKRYTIYA, IZOBRET, PROM. OBRAZTSY, TOVARNYE ZNAKI 1970, 47(9)

DATE PUBLISHED--03MAR70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--CHEMICAL PATENT, SODIUM SULFIDE, COKE, SODIUM SULFATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3001/1457 STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0126988

UNCLASSIFIED

2/2 007 UNCLASSIFIED PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0126988

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. NA SUB2 S IS PREPD. BY PASSING MOLTEN NA SUB2 SO SUB4 THROUGH A LAYER OF PETROLEUM COKE, CONTG. 4-8PERCENT S, THUS REDUCING IT.

UNCLASSIFIED

USSR UDC 621.315.592

MAMONTOV, A. P., OKUNEV, V. D., GAMAN, V. I., ZAKHAROV, B. G., Siberian Physicotechnical Institute imeni V. D. Kuznetsov, Tomsk

"Distribution of Radiation Defects in Gallium Arsenide in the Presence of Deuteron Irradiation"

Leningrad, Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 865-868

Abstract: On the basis of an electron probe study of the distribution of the luminescence intensity in gallium arsenide when irradiated with deuterons as a function of the deuteron energy and the integral deuteron flux, a quantitative estimate was made of the defect distribution with respect to the path lengths of the deuterons. The dependence of the path length on the deuteron energy was calculated, and the results are compared with the experimental values of the path lengths obtained from the data on the spatial variation of the cathode luminescence. The coefficient of radiation variation of the lifetime K in n-type gallium arsenide increases with an increase in the initial concentration of the carriers, and at the end of the deuteron path it varies from $1.35 \cdot 10^{-2}$(sec·deuteron/cm^2)$^{-1}$ for a specimen with a carrier concentration of $n = 7 \cdot 10^{-15}$cm^{-3} to $8.4 \cdot 10^{-2}$(sec·deuteron/cm^2)$^{-1}$ for a specimen with $n = 4.5 \times 10^{17}$cm^{-3}. The defect distribution with respect to the deuteron path length

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UDC 621.315.592

MAMONTOV, A. P., et al., Fizika i Tekhnika Poluprovodnikov, Vol 6, No 5, 1972, pp 865-868

is characterized by the spatial variation of the coefficient K. Good agreement of the experimental data with respect to the K distribution with the calculated data for the distribution of the rate of introduction of defects n_d is observed.

USSR UDC 621.382.2

MAMONTOV, A.P., NICHIPURENKO, B.A., CKUNEV, V.D., PRESNOV, V.A.

"Isolation Of p-n Junctions In Gallium Arsenide Under Conditions Of Proton Irradiation"

Fizika i tekhnika poluprovodnikov, Vol 6, No 4, Apr 1972, pp 717-720

Abstract: Gallium arsenide crystals were irradiated in a cyclotron by protons with various energies. A scheme for obtaining isolated p-n junctions is shown and discussed. The energies of the bombarding protons were measured with the aid of aluminum foil placed before the crystals being irradiated. The results of the studies show that isolation of p-n junctions during proton irradiation is an effective method of improving the characteristics of gallium arsenide p-n junctions. 3 figs. 5 ref. Received by editors, 12 May 1971.

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1/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

TITLE--DISTRIBUTION OF RADIATION DEFECTS IN GALLIUM ARSENIDE DURING PROTON IRRADIATION -U-

AUTHOR-(04)-OKUNEV, V.D., MAMONTOV, A.P., ZAKHAROV, B.G., AZILOV, B.S.

COUNTRY OF INFO--USSR

SOURCE--FIZ. TEKH. POLUPROV. 1970, 4(1), 101-5

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--RADIATION DAMAGE, GALLIUM ARSENIDE, PROTON BOMBARDMENT, CRYSTAL LUMINESCENCE, IMPURITY CENTER, RADIATION INTENSITY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1983/1708 STEP NO--UR/0449/70/004/001/0101/0105

CIRC ACCESSION NO--AP0054550

UNCLASSIFIED

2/2 034 UNCLASSIFIED PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0054550

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DISTRIBUTION OF RADIATION DEFECTS IN GAAS DURING PROTON IRRADN. WAS OBTAINED FROM THE DEPENDENCE OF THE DISTRIBUTION OF LUMINESCENCE INTENSITY ON THE ENERGY (2-5 MEV) AND THE DOSE (4.17 TIMES 10 PRIME10-4.17 TIMES 10 PRIME12 PROTONS-CM PRIME2) OF PROTONS. THE DISTRIBUTION OF THE LUMINESCENCE INTENSITY OVER THE CRYSTAL DEPTH WAS MEASURED BY MEANS OF AN ELECTRON MICROPROBE. THE EXPTL. VALUES OF THE DEPTH OF PROTON PENETRATION ARE IN GOOD AGREEMENT WITH CALCD. ONES. THE MAGNITUDE OF THE CHANGE OF THE LUMINESCENCE INTENSITY DURING PROTON IRRADN. DEPENDS ON THE TYPE AND CONCN. OF IMPURITIES IN GAAS. FOR TE DOPED GAAS, THE INTENSITY CHANGE OBTAINED IS EXPLAINED AS DUE TO THE FORMATION OF COMPLEXES LIKE GA SUB2 V SUBGA TE SUB3 (V SUBGA IS A GA VACANCY).

UNCLASSIFIED

USSR

UDC 669.715.004.82

OKUNEV, V.M.

"Deficiencies in Technology and Organization of Secondary Aluminum Alloy Production"

Moscow, Tsvetnyye Metally, No 6, June 71, pp 54-59

Abstract: Deficiencies in the area of raw materials preparation are noted. Shortcomings in the organization of scientific research studies and training of engineering personnel are indicated and discussed. The necessity of using the hydrometallurgical slag treatment method, which makes it possible to recover not only the metal but salts contained in the form of granules, with the purpose of using them secondarily as a flux material is stressed, as is the absolute necessity of secondary aluminum refining. Recommendations on developing and improving the organization of scientific and research studies are presented.

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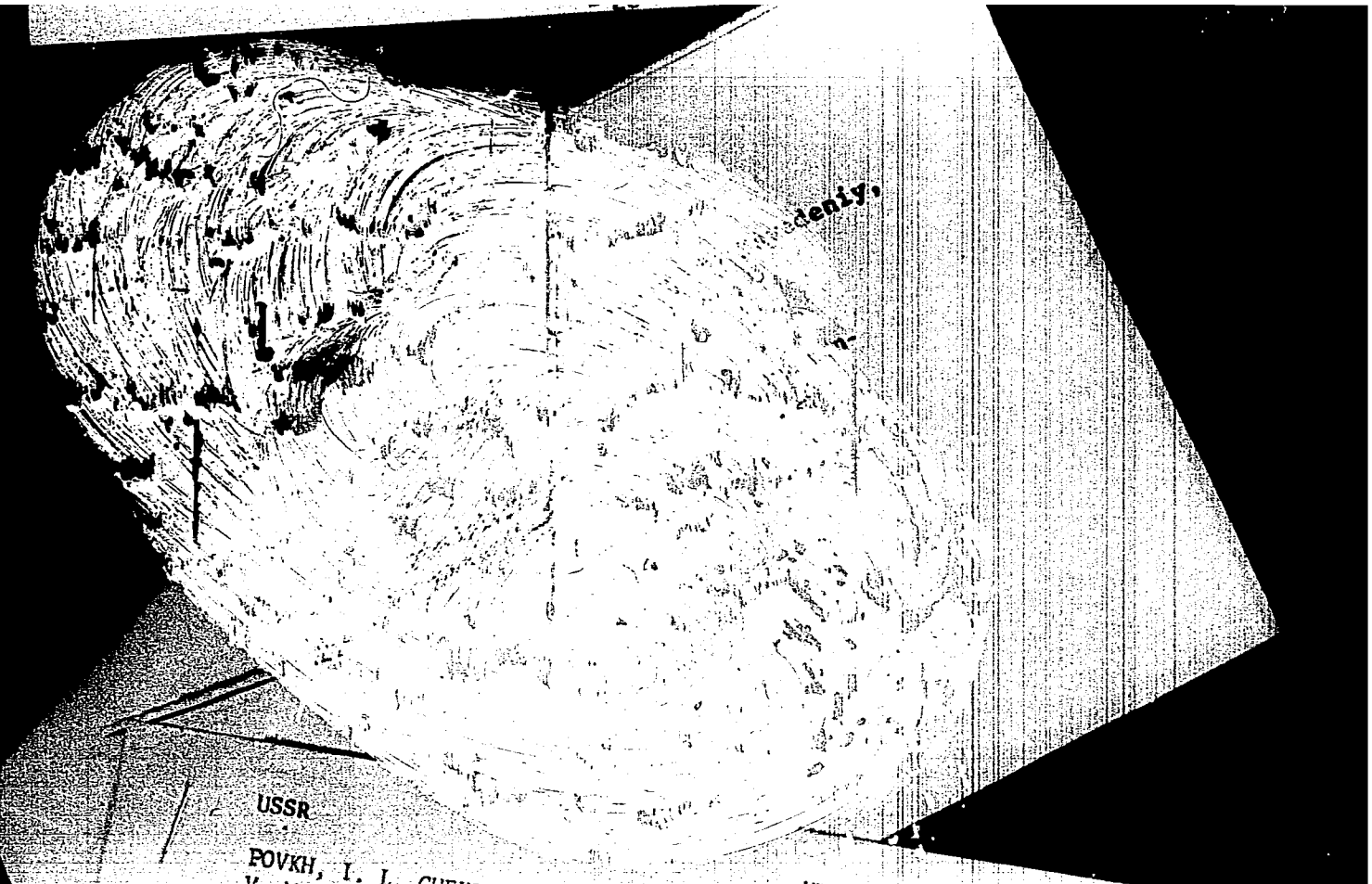

USSR

UDC:669.714

POVKH, I. L., CHEKIN, B. V., SMIRNOV, V. A., [illegible], V. M., OKUNEV, V. M. and POPOV, V. A., Donets State University, Donets Scientific Research Institute of Ferrous Metals, State Scientific Research and Planning Institute of Alloys and Nonferrous Metal Processing

"Extraction of Aluminum and Oxides From Salt Slags Using Electromagnetic Forces"

Ordzhonikidze, Izvestiya Vysshikh Uchevnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1971, pp 65-68

Abstract: The possibility in principle of the process of extraction of aluminum buttons and oxides from melted salt slags using electromagnetic forces is demonstrated. The basis of the phenomenon is the fact that when a weakly conducting liquid in which conducting droplets and non-conducting particles are suspended is placed in crossed electrical and magnetic fields, the specific gravity of the conducting phases increases.

1/2

UDC 621.396.2:621.371.1

USSR

ZAYEZDNYY, A. M., OKUNEV, YU. B. (Editors)

Apparatura peredachi diskretnoy informatsii MS-5 (Digital Data Transmission Equipment MS-5), Moscow, Svyaz' Press, 1970, 152 pp, ill. 60 k (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A220K)

Translation: The construction principles, characteristics, test results and basic schematic solutions of equipment designed for digital data transmission over shortwave radio channels are presented. The possibilities of using the equipment in various communications systems are investigated. The collection is intended for engineering, technical and scientific workers in radio communications. There are 99 illustrations, 6 tables and an 89-entry bibliography.

1/1

AA0043452

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

244424 SYNCHRONIZING MULTICHANNEL TELECOMMUNICATION SYSTEM with no separate synchronization channel where the generator of synchronizing pulses is controlled by an out of phase pulse obtained by special processing of two pairs of readings obtained by means of four commutating filters matched with a given channel signal. The commutating filters are switched in pairs with a displacement equal to a fraction of the basic transmission. The amplitudes of free oscillations of the filters are used as a basis. The conversion is based on detecting first the absolute difference between the readings of each pair of channels and then the two resultant values are compared again. The result is an out of phase signal which is applied to the generator of synchronising pulses.
4.11.66 as 1110508/26-9. V.V.GINZBURG & YU.B. OKUNEV.
(9.10.69) Bul 18/28.5.69. Class 21a. Int.Cl.H 04j.

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19761805

USSR

UDC 621.391.519.2

OKUNEV, Yu. B.

"Synthesis of Signals Insuring Relative Invariance of a Communication System Under the Effect of Additive Noise"

Materialy nauchno-tekhn. konferentsii. Leningr. elektrotekhn. in-t svyazi. Vyp. 2 (Materials of the Scientific and Technical Conference. Leningrad Electrotechnical Communications Institute. Vyp. 2), Leningrad, 1970, pp 24-28 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8A105)

Translation: The problem of synthesizing signals which insure relative invariance of a communications system with respect to additive noise is formulated. It is demonstrated that the given problem reduces to minimizing a defined functional with respect to quadratic or minimax criteria. Means of solving the problem by reducing it to a system of linear equations or to the problem of linear programming are noted.

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USSR

UDC 621.382

KARPOV, YU. S., LOTOTSKIY, B. YU., OKUNEV, YU. T., PASYNKOV, V.V., CHIRKIN, L.K.

"Varistors"

V sb. Poluprovodn. pribory i ikh primeneniye (Semiconductor Devices And Their Application--Collection Of Works). No 23, Moscow, "Sov. radio," 1970, pp 305-317 (from RZh--Elektronika i yeye primeneniye, No 11, November 1970, Abstract No 11B265)

Translation: The mechanism of varistor action is considered, and the basic parameters and characteristics of varistors of domestic manufacture are presented, as well as the results of computation of certain characteristics of varistors, assuming that heating of the point contacts is a basic effect leading to nonlinearity of the current-voltage characteristic in the operating range of the change of currents and voltages. It is shown that by introducing an impurity with a different ionization energy into silicon carbide, it is possible to change within wide limits the value of the coefficient of nonlinearity of the current-voltage characteristic. The results are presented of investigations of the noise properties of varistors;and the dependence of the noise factor on the operating conditions of varistors and the temperature of the environment. 7 ill. 1 tab. 5 ref. Summary.

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USSR

UDC 678.664 - 405.8.01:536.485

DEMENT'YEVA, M. A., OKUNEVA, A. G., POKHOVSKIY, L. I., and KRYUCHKOV, F. A.

"The Effect of the Nature of Alkylene Oxide on the Properties of Frostresistant Elastic Polyurethane Foam"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 61-62

Abstract: An attempt was made to synthesize frostresistant elastic foam polyurethane based on tetrahydrofuran copolymerized with ethylene and 1,2-butene oxides. Polyurethane foam was obtained at room temperature. Copolymers of tetrahydrofurane with ethylene oxide and 1,2-butene oxide did not differ in their properties except for viscosity: the increased content of ethylene oxide resulted in higher viscosity of the copolymer. The behavior of 1,2-butene oxide copolymer was the opposite. It has been established that regardless of the nature of alkylene oxide, the frostresistance of polyurethane foam is maintained down to about -55 to -60°C. The type of alkylene oxide used has an effect on the content of primary hydroxyl groups in the copolymers, which are responsible for their reactivity towards isocyanates. A higher content of primary hydroxyl groups in the tetrahydrofurane + ethylene oxide copolymer makes it possible to use a less active tolulylene diisocyanate (T-65) for the synthesis of polyurethane foam.

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1/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--OBSERVATIONS OF TRANSPORT PHENOMENA AND OF ATOMIC MOTION IN THE LIQUID PHASE -U-

AUTHOR-(05)-REGEL, A.R., ANDREEV, A.A., KOTOV, B.A., MAMADALIEV, M., OKUNEVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--J. NON-CRYST. SOLIDS 1970, 4(1) 151-60

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GALLIUM, TRANSPORT PHENOMENA, FLUID STATE, ATOMIC PROPERTY, THERMAL CONDUCTIVITY, NEUTRON SCATTERING, SELENIDE, INDIUM COMPOUND, COPPER COMPOUND, SOLID STATE, ANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0364 STEP NO--NE/0000/70/004/001/0151/0160

CIRC ACCESSION NO--AP0100850

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME COMPOS., SB SUB2 SE SUB3, INSE, AND CUSBSE SUB2 HAVE BEEN STUDIED WHICH HAVE RELATIVELY LOW ELEC. CONDS. (IS SMALLER THAN 100 MHO-CM) IN THE LIQ. STATE. EXPTL. RESULTS ABOVE AND BELOW THE M.P. ARE REPORTED AND DISCUSSED FOR THE ELEC. COND., HALL COEFF., THERMOPOWER AND THE THERMAL COND. RESULTS OF A STUDY OF THE THERMAL MOTION OF LIQ. AND SOLID GA BY NEUTRON SCATTERING ARE ALSO PRESENTED.

UNCLASSIFIED

USSR

UDC 612.592-087.86

AFANAS'YEVA, R. F., Candidate of Medical Sciences; OKUNEVA, S. G., Central Scientific Research Institute of the Sewing Industry

"Determination of the Heat Deficit of the Human Body During Cooling"

Moscow, Gigiyena i Sanitariya, No 7, 1971, pp 38-43

Abstract: Four nude male subjects seated in a microclimatic chamber were exposed to temperatures of +10°, 0°, and -10°C with the body and skin temperatures (at 10 different places) measured every five min. In the course of cooling, the ratios of body and skin temperatures were found to change, the former increasing, the latter decreasing. The changes in coefficients of "mixing" of these values were exponential. The absolute values of coefficients of "mixing" of skin and body temperatures varied with the intensity of cold and the individual thermoregulatory reactions. The following equation can be used to determine the coefficients of "mixing" at any time of exposure to cold at a given rate of cooling:

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USSR

AFANAS'YEVA, R. F., Gigiyena i Sanitariya, No 7, 1971, pp 38-43

$$C = \frac{(0.865.200 - q - 0.55)}{1330 - 7.775} e - 0.009 (T - S),$$

where C is the coefficient of "mixing" of the body temperature (1 - C is the coefficient of "mixing of skin temperature), q is the density of heat flow, e is the base of the natural logarithm, T is the time of exposure to cold, and S is the body surface.

2/2

USSR

UDC 669.71.48

POVKH, I. L., CHEKIN, D.V., SMIRNOV, V. A., BAZILEVSKIY, V. M., OKUNEV, V. M., POPOV, V. A.

"Study of the Possibility of the Impoverishment of Fused Salt Slags From Aluminum Production by Electromagnetic Weighting"

Tr. Donetsk. NII Chern. Metallurgii [Works of Donets Scientific Research Institute for Ferrous Metallurgy], 1970, No. 20(4), pp. 21-25. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G177 by the authors).

Translation: Studies performed on the electromagnetic weighting of salt slags produced in melting Al showed that it can be used to extract up to 98% of the Al and 83% of the oxides. 3 figs; 2 tables.

1/1

UDC 669.715.004.82

USSR

OKUNEV, V.M.

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UDC:669.714

USSR

POVKH, I. L., CHEKIN, B. V., SMIRNOV, V. A., BAZILEVSKIY, V. M., OKUNEV, V. M. and POPOV, V. A., Donets State University, Donets Scientific Research Institute for Ferrous Metals, State Scientific Research and Planning Institute of Alloys and Nonferrous Metal Processing

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USSR

POVKH, I. L., et al., Izvestiya Vysshikh Uchevnykh Zavedeniy, Tsvetnaya Metallurgiya, No 1, 1971, pp 65-68

This causes the droplets to precipitate to the bottom and the non-conducting particles to rise to the top.

UDC 621.396.2:621.371.1

USSR

ZAYEZDNYY, A. M., OKUNEV, YU. B. (Editors)

Apparatura peredachi diskretnoy informatsii MS-5 (Digital Data Transmission Equipment MS-5), Moscow, Svyaz' Press, 1970, 152 pp, ill. 60 k (from RZh-Radiotekhnika, No 4, Apr 71, Abstract No 4A220K)

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1/1

AA0043452

UR 0482

Soviet Inventions Illustrated, Section II Electrical, Derwent, 2/70

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4.11.66 as 1110508/26-9. V.V.GINZBURG & YU.B.OKUNEV. (9.10.69) Bul 18/28.5.69. Class 21a. Int.Cl.H 04j.

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19761805

USSR

UDC 621.391.519.2

OKUNEV, Yu. B.

"Synthesis of Signals Insur ng Relative Invariance of a Communication System Under the Effect of Additive Noise"

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USSR UDC 621.382

KARPOV, YU. S., LOTOTSKIY, B. YU., CKUNEV, YU. T., PASYNKOV, V.V., CHIRKIN, L.K.

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1/1

UDC 678.664 - 405.8.02:536.486

USSR

DEMSHT'YEVA, M. A., OKUNEVA, A. G., POKROVSKIY, L. I., and KRYUCHKOV, P. A.

"The Effect of the Nature of Alkylene Oxide on the Properties of Frostresistant Elastic Polyurethane Foam"

Moscow, Plasticheskiye Massy, No 3, 1972, pp 61-62

Abstract: An attempt was made to synthesize frostresistant elastic foam polyurethane based on tetrahydrofuran copolymerized with ethylene and 1,2-butene oxides. Polyurethane foam was obtained at room temperature. Copolymers of tetrahydrofurane with ethylene oxide and 1,2-butene oxide did not differ in their properties except for viscosity: the increased content of ethylene oxide resulted in higher viscosity of the copolymer. The behavior of 1,2-butene oxide copolymer was the opposite. It has been established that regardless of the nature of alkylene oxide, the frostresistance of polyurethane foam is maintained down to about -55 to -60°C. The type of ethylene oxide used has an effect on the content of primary hydroxyl groups in the copolymers, which are responsible for their reactivity toward isocyanates. A higher content of primary hydroxyl group in the tetrahydrofurane + ethylene oxide copolymer makes it possible to use a less active tolylene diisocyanate T-65 for the synthesis of polyurethane foam.

UNCLASSIFIED PROCESSING DATE--18SEP70

1/2 028

TITLE--OBSERVATIONS OF TRANSPORT PHENOMENA AND OF ATOMIC MOTION IN THE LIQUID PHASE -U-

AUTHOR-(05)-REGEL, A.R., ANDREEV, A.A., KOTOV, B.A., MANADALIEV, M., OKUNEVA, N.M.

COUNTRY OF INFO--USSR

SOURCE--J. NON-CRYST. SOLIDS 1970, 4(1) 151-60

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--GALLIUM, TRANSPORT PHENOMENA, FLUID STATE, ATOMIC PROPERTY, THERMAL CONDUCTIVITY, NEUTRON SCATTERING, SELENIDE, INDIUM COMPOUND, COPPER COMPOUND, SOLID STATE, ANTIMONY COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/0364 STEP NO--NE/0000/70/004/001/0151/0160

CIRC ACCESSION NO--AP0100850

UNCLASSIFIED

2/2 028 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0100850

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. SOME COMPDS., SB SUB2 SE SUB3, INSE, AND CUSBSE SUB2 HAVE BEEN STUDIED WHICH HAVE RELATIVELY LOW ELEC. CONDS. (IS SMALLER THAN 100 MHO-CM) IN THE LIQ. STATE. EXPTL. RESULTS ABOVE AND BELOW THE M.P. ARE REPORTED AND DISCUSSED FOR THE ELEC. COND., HALL COEFF., THERMOPOWER AND THE THERMAL COND. RESULTS OF A STUDY OF THE THERMAL MOTION OF LIQ. AND SOLID GA BY NEUTRON SCATTERING ARE ALSO PRESENTED.

UNCLASSIFIED

USSR

UDC 612.592-087.86

AFANAS'YEVA, R. F., Candidate of Medical Sciences; OKUNEVA, S. G., Central Scientific Research Institute of the Sewing Industry

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Abstract: Four nude male subjects seated in a microclimatic chamber were exposed to temperatures of +10°, 0°, and -10°C with the body and skin temperatures (at 10 different places) measured every five min. In the course of cooling, the ratios of body and skin temperatures were found to change, the former increasing, the latter decreasing. The changes in coefficients of "mixing" of these values were exponential. The absolute values of coefficients of "mixing" of skin and body temperatures varied with the intensity of cold and the individual thermoregulatory reactions. The following equation can be used to determine the coefficients of "mixing" at any time of exposure to cold at a given rate of cooling:

1/2

USSR

AFANAS'YEVA, R. F., Gigiyena i Sanitariya, No 7, 1971, pp 38-43

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where C is the coefficient of "mixing" of the body temperature (1 - C is the coefficient of "mixing of skin temperature), q is the density of heat flow, e is the base of the natural logarithm, T is the time of exposure to cold, and S is the body surface.

2/2

1/2 045 UNCLASSIFIED PROCESSING DATE--09OCT70

TITLE--OPTICAL ORIENTATION OF PRIME65 RB AND PRIME87 RB ATOMS BY LIGHT OF THE D SUB2 LINE AND RELAXATION IN THE PRIME2 P SUBTHREE HALVES STATE DUE

AUTHOR-(04)-ZHITNIKOV, R.A., KULESHOV, P.P., OKUNEVICH, A.I., SEVASTYANOV, B.N.

COUNTRY OF INFO--USSR

SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58, NR 3, PP 831-842

DATE PUBLISHED--------70

SUBJECT AREAS--PHYSICS

TOPIC TAGS--OPTIC PUMPING, RUBIDIUM, INERT GAS, GAS PRESSURE, ROTATING MAGNETIC FIELD, ELECTRON ENERGY LEVEL, HYPERFINE STRUCTURE, EXCITED ELECTRON STATE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1977/0006 STEP NO--UR/0056/70/058/003/0831/0842

CIRC ACCESSION NO--AP0043606

UNCLASSIFIED

2/2 045 UNCLASSIFIED PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0043606

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE DEPENDENCE OF OPTICAL PUMPING SIGNALS OF RB ATOMS ON THE PRESSURE OF THE NOBLE GASES HE, NE, AR, KR AND XE IS INVESTIGATED. BY APPLYING A ROTATING MAGNETIC FIELD FOR SAPARATELY OBSERVING THE RESONANCE SIGNALS FROM TWO HYPERFINE STRUCTURE SUBLEVELS OF THE RB ATOM GROUND STATE ONE CAN FIND THE CHARACHERISTIC PRESSURE OF THE INERT GAS, P SUBO PRIME, AT WHICH THE SIGNAL OF THE HYPERFINE STRUCTURE SUBLEVEL WITH A LARGE PHI VALUE (PHI IS THE TOATL MOMENTUM) VANISHES. THE VALUES OF P SUBO PRIME OBTAINED ARE EMPLOYED FOR CALCULATING THE CROSS SECTIONS FOR DISORIENTATION IN THE PRIME2 P SUBTHREE HALVES EXCITED STATE OF THE RB ATOMS DUE TO COLLISIONS WITH NOBLE GAS ATOMS.

UNCLASSIFIED

USSR UDC 681.327.11

OKUNEVICH, N. U., Special Design Office of the Ministry of Higher and Middle Education of the USSR

"A Device for Reading out Graphic Information"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 23, Aug 72, Author's Certificate No 346728, Division G, filed 18 Apr 69, published 28 Jul 72, p 196

Translation: This Author's Certificate introduces a device for reading out graphic information. The device contains a plotting board with windings connected to X-axis and Y-axis commutation circuits which are connected in turn to a control unit. The inputs of the control circuit are connected to a decoder, a counter, and an oscillator whose output is connected to the counter through a shaper amplifier. The device also contains a register and a pickup pencil which is connected to an amplifier. As a distinguishing feature of the patent, the operating reliability of the device is improved by adding a phase detector and a coincidence circuit whose output is connected to the register, while the inputs are connected respectively to the counter, through the shaper amplifier, and to a phase detector. One of the phase detector inputs is connected to the oscillator output, while the other is connected to the amplifier.

1/1

USSR UDC 621.317.799:621.315.61

OKUNEVICH, R. I.

"An Installation for Checking the Thickness of Dielectric Materials Applied to Metal by Using Superhigh-Frequency Radio Wa s"

Tr. NII introskopii (Works of the Scientific Research Institute of Internal Inspection), 1970, vyp. 4, pp 39-40 (from RZh-Radiotekhnika, No 8, Aug 71, Abstract No 8A309)

Translation: An installation is developed which can be used in conjunction with a microwave signal to check dielectric coatings of complex shape and variable thickness (up to 120 mm [sic]) applied to metal. A working model of the installation is used to measure the thickness of a multilayered coating consisting of rubber reinforced by asbestos. The optimum method and working frequency for checking the thickness of the coating are selected. It is noted that the method used in highly accurate. A. K.

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USSR UDC 624.131.43+539.21.084-492.3

LESHCHINSKIY, V. M., LUPINSKIY, M. I., OKUNEVSKIY, L. N.

"Experimental Study of the Joint Operation of Fastenings of Concrete Plates and Soils of the Surface of a Slope Under Wave Action"

Tr. Khar'kov. otd. vod. kh-va prom-predpriyatiy VNII VODGEO (Works of the Khar'kov Department of Water Economy of Industrial Engerprises of the All-Union Scientific Research Institute of Water Supply, Sewer Systems, Hydraulic Engineering Structures and Engineering Hydrogeology), 1971, No. 9, pp 48-57 (from RZh-Mekhanika, No 3, Mar 72, Abstract No 3V903)

Translation: Experimental studies of the deformations of fastening plates and the surface of soil slopes under the plates are described. The studies were conducted in laboratory molds at a height of the slopes of up to 1.25 m with sectional plates 0.8 × 0.8 × 0.06 m and a monolithic plate 5.0 × 1.5 × 0.06 m for three forms of soil and various densities of the soil and also in the presence of reverse filters of various thickness and granular composition. The purpose of the study was to evaluate the process of forced interaction of the fastening in the soil of the bank under shock (brief) rise in pressure from

1/2

USSR

LESHCHINSKIY, V. M., et al, Tr. Khar'kov. otd. vod. kh-va prom-predpriyatiy VNII VODGEO, 1971, No. 9, pp 48-57

a breaking of waves. This action was simulated by shock loads caused by a dropping load. The authors emphasize that the intensity of the tremors (acceleration of vibrations) of the plates and ground reproduced in the experiments in the zone of impact corresponded to the intensity of tremors under the action of waves of a certain (calculated) height measured in nature. The forms of the deformations of the plates and earth slopes are given. The displacements of the plates and soils as a function of thickness in the form of the fastening plates, and the magnitude of the displacements as functions of the initial density of the soil and the thickness of the filter preparation, etc. are discussed. P. D. Yefdokimov.

2/2

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70

TITLE--TUBE DRAWING WITH A FLOATING PLUG, P -U-

AUTHOR--OLAH, Z.

COUNTRY OF INFO--USSR

SOURCE--BANYASZATI ES KOHASZATI LAPOK, KOHASZAT, 1970, VOL 103, NR 6, PP 282-285

DATE PUBLISHED-------70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR

TOPIC TAGS--METAL DRAWING, METAL PIPE, MATHEMATIC EXPRESSION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0171 STEP NO--HU/0041/70/103/006/0282/0285

CIRC ACCESSION NO--AP0135667

UNCLASSIFIED

2/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
CIRC ACCESSION NO--AP0135667
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHOR DISCUSSES THE TECHNOLOGICAL PARAMETERS OF TUBE DRAWING WITHA FLOATING PLUG, CALCULATING THE CONDITIONS OF STABILITY OF THE FLOATING PLUG, ITS DIMENSIONS, THE AVERAGE RESISTANCE TO FORMING WHICH IS DEVELOPED DURING DRAWING AND THE DRAWING FORCE. THE CALCULATIONS ARE SUPPORTED BY DRAWING TESTS. FACILITY: SZEKESFEHERVARI KONNYUFEMMU.

UNCLASSIFIED

USSR

UDC 621.791.008.1

LESHCHINSKIY, L. K., and OLDAKOVSKIY, A. I.

"Progressive Methods of Welding and Surfacing in Ferrous Metallurgy and Machine Building" (Scientific and Technical Conference on Welding)

Kiev, Avtomaticheskaya Svarka, No 10, Oct 72, pp 77-78

Abstract: The All-Union Scientific and Technical Conference on "Progressive Methods of Welding and Surfacing in Ferrous Metallurgy and Machine Building" was held in Zhdanov on 27-30 July 1972. Three sections were involved in the conference: Theoretical Problems and New Welding Methods, Welding Metallurgy and Technology, and Modern Methods of Surfacing and New Surfacing Materials. More than 60 papers and reports were given.

The following reports or descriptions of papers were highlighted:

1. BAGRYANSKIY, K. V., Doctor of Engineering Sciences, Zhdanov Metallurgical Institute--"Calculation of the Heat Effect Emanating in the Passage of Strip Electrodes".
2. DYURGEROV, N. G., Candidate of Engineering Sciences, (RISKhM)--problem of jet transfer of metal when welding with a consumable electrode in gas shields.
3. URYUMOV, V. YA., and VASILENKO, A. I., Candidates of Engineering Sciences (ZhdMI)--calculation method of determining chemical composition of the seam metal when welding under ceramic fluxes.

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4. LESHCHINSKIY, L. K., Candidate of Engineering Sciences and PAVLOV, I. V. (ZhdMI), BESKHLEBNYY, V. A., et al, Voroshilovgrad Machine Building Institute--The effect of consumable electrode shape on the composition and properties of a surfaced metal and on the features of the alloying process.
5. TARASOV, V. V. (ZhdMI)--investigation of the chemical heterogeneity in coarse-grain wear-resistant surfacing in a transverse magnetic field.
6. LESHCHINSKIY, L. K., Candidate of Engineering Sciences--determination of electrode heating in the passage with a molten slag.
7. ROYANOV, V. A., Candidate of Engineering Sciences, and VOYTSEKHOVSKIY, YE. V. (ZhdMI)--Investigations of alloying processes in the surfacing layer during arc metallizing.
8. SHEYNMAN, YE. L. (TashIIZhT)--features of multi-electrode electric arc and electroslag horizontal surfacing.
9. KAL'YANOV, V. N., and BRAYLOVSKIY, O. B., Candidates of Engineering Sciences (ZhdMI), P'YANOV, V. V. (Kommunarsk Metallurgical Plant), KASSOV, D. S., et al (Kramatorsk Industrial Institute)--New compositions of alloys for wear-resistant surfacing and development of surfacing materials.

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10. KRYZHANOVSKIY, A. S. (ENIKMash)--optimization of the cobalt content in a surfaced metal.
11. KHARCHENKO, V. M. (Leninogorsk Polymetals Combine)--surfacing of mining, beneficiating, and metallurgical equipment parts.
12. SHLYKOV, N. Ye. (Kommunarsk Metallurgical Plant)--analysis of the economic feasibility of using surfacing in the repair of metallurgical equipment.
13. GUBENKO, V. A. (NIIPTMash)--Development of technology and equipment for plasma-arc surfacing with the use of granulated powders.
14. PAVLOV, I. V. (ZhdMI)--development of a ceramic flux for corrosion-resistant surfacing of ship shafts with thin austenitic electrode strip.
15. YERSHOV, S. A. and ZHUKOV, A. B. (ZhdMI)--Features of coarse-grain surfacing of aluminum bronze onto steel under a ceramic flux.
16. KURATOV, V. V., and FAL'KOV, A. I. (Kurgan Machine Building Institute)--process of surfacing with a three-phase arc.
17. KHEYFETS, A. L. (ChPI)--properties of a metal surface in an air flow.
18. POPOV, YU. V., and IVANOV, V. V. (MVTU)--experimental data from an investigation of the features of vacuum welding using arc discharge with a hollow cathode.

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LESHCHINSKIY, L. K., and OLDAKOVSKIY, A. I., Avtomaticheskaya Svarka, No 10, Oct 72, pp 77-78

19. DMITRIYEV, V. V., Candidate of Engineering Sciences, et al(ZhdMI)--technology and equipment as well as the properties of high-speed steels, vacuum surfaced on a multi-blade tool.
20. LYUBAVSKIY, K. V., and KHODAKOV, V. D., Doctors of Engineering Sciences (TsNIITMash)--vacuum-arc surfacing with a vaporizing cathode of power armature parts.
21. LAZARSON, E. V. (Perm Polytechnic Institute)--processes of gas absorption and liberation in the weld bath and pore formation in the seam metal.
22. GOL'TSOVA, V. P. (Voronezh)--"Laser Welding of Conductor Microconnections"
23. MALYUKOV, A. F., Candidate of Engineering Sciences, et al (Perm Polytechnic Institute)--"Thermomechanical Treatment of Joints suitable for processes of contact welding of hardenable steels".
24. SERENKO, A. N., Candidate of Engineering Sciences, et al (ZddMI)--"Determining the Stress State of Weld Joints".
25. SMIRNOV, B. A., Candidate of Engineering Sciences, et al., (VNIIMontazhspetsstroy)--use of powder filler metal in electroslag welding.

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LESHCHINSKIY, L. K. and OLDAKOVSKIY, A. I., Avtomaticheskaya Svarka, No 10, Oct 72, pp 77-78

26. TSAREVSKIY, V. Z. (VNIIPT khimnefteapparatury)--use of induction heating for the normalization of electroslag-welded seams.
27. SOTNIK, I. S. (UkrNIIMET)--effect of protective coatings for rolling on the mechanical properties and degree of surface metal saturation by gases and nonmetallic inclusions.
28. SHONO, S. A. (NIIPTMash), ANTONETS, D. P., Candidate of Engineering Sciences, and SAVCHENKO, A. I. (ZhdMI)--Technological features of welding thick steels in CO_2 and the effect of oxygen added to the CO_2 on the technological characteristics of the welding process.
29. SURZHIKOV, A. S., and FIL'CHAKOV, A. A. (ZhdMI) and PANASENKO (Voroshilovgrad Machine Building Institute)--development of carbonate-fluorite coated electrodes.
30. KORNEYEVYY, A. D., and ZUSNNYY, V. YA. (ZhdMI)--Means of overcoming the difficulties of welding high-purity aluminum.
31. MOCHALOVA, L. N.--Corrosion resistance of nickel and nickel alloy weld joints in different corrosive media.
32. PASHISHKYAVICHYUS, I. I. (Vil'nyus Engineering Construction Institute) "Modeling the Voltage Between Welding Electrodes".

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LESHCHINSKIY, L. K. and OLDAKOVSKIY, A. I., Avtomaticheskaya Svarka, No 10, Oct 72, pp 77-78

33. KABANOV, N. G. (VNIIMETMash)--problems of improving the welding of ferrous metal strip in continuous metallurgical units.
34. GOL'TSOV, V. A.--Work conducted at MEI on the electron-beam welding of low-alloy, thick (90-110 mm) steels and thin-wall pipe.
35. SAVCHENKOV, V. A., Candidate of Engineering Sciences, et al. (UkrNIIMet)--results of a study of the properties of weld joints when the seam is alloyed with small amounts of niobium.
36. RUBENCHIK, YU. I., Candidate of Engineering Sciences, et al (VNIIPT khimnefteapparatury)--welding and surfacing of clad steels in chemical machine building.
37. KOTEL'NIKOV, D. I., Candidate of Engineering Sciences, et al (Chernigov Affiliate of KPI)--Technology of Welding borosilicate glass with metal.

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USSR

UDC 621.791.053:620.186.4

BAGRYANSKIY, K. V., Candidate of Technical Sciences, and OLDAKOVSKIY, A. I., Engineer, Zhdanov Metallurgical Institute

"Method of Testing Seam Metal for Resistance to Formation and Development of Crystallization Cracks"

Moscow, Svarochnoye Proizvodstvo, No 6, 1971, pp 39-40

Abstract: The authors have developed a method for testing seam metal for resistance to formation and propagation of crystallization cracks, corresponding to the requirements of maximum approximation of heat and deformation conditions in testing to conditions of development of these cracks during welding, high sensitivity, and satisfactory reproducibility. The method consists of welding a seam along two plates, one of which is held immobile while the other is slowly rotated so as to spread the seam as it is formed. The welding point is moved in the direction toward the point at which the two plates do not move relative to each other, but rather simply rotate. At some point, the two specimens will "seize." Observation of the seam formed and the rate of forced deformation at "seizure" is used to determine the welding qualities of the metal in the seam.

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USSR

UDC 539.125.4:535.853

OL'DEKOP, L. G., POLENOV, B. V., KHAZANOV, B. I.

"Low-Energy Proton Spectrometer"

Tr. Soyuzn. NII priborostr. (Works of the Union Scientific Research Institute of Instrument Building), 1971, No. 15, pp 3-10 (from Referativnyy Zhurnal, Metrologiya i izmeritel'naya tekhnika, No 11, Nov 71, Abstract No 11.32.1983)

Translation: A proton spectrometer is described that is designed for measuring spectral distributions of protons with particle energies from $1.8 \cdot 10^4$ to $1.8 \cdot 10^8$ part/sec·cm^2. A modulation shower with a collector is used as a detection unit in which protons passing the energy selection system are additionally deflected in the field of the electrostatic condenser in order to reduce noise from ultraviolet radiation and particles of a different type. The collector currents are recorded by a narrow-band ac amplifier with synchronous detection. 3 ill., 7 ref. Resume.

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UDC 535.33

USSR

SEVCHENKO, A. N., OL'DEKOP, YU. A., ZYAT'KOV, I. P., BYLINA, G. S., SAGAYDAK, D. I., SHINGEL', I. A.

"Investigation of the IR Spectra of Poly-n-Formylstyrene, Styrene Copolymers, n-Formylstyrene, and Some of Their Derivatives"

Minsk, Zhurnal Prikladnoy Spektroskopii (Journal of Applied Spectroscopy), Vol 13, No 4, Oct 1970, p 633-638

Abstract: The authors study the ir spectra of several styrene (S) and n-formylstyrene (FS) copolymers containing various aldehyde groups as well as several aldehyde group derivatives: namely, poly-n-formylstyrene (PFS); copolymers I-V containing 23.8, 31.9, 36.0, 40.2, and 456 mole % FS, respectively; Schiff copolymers I and V; phenylhydrazone copolymer IV; azine copolymer I, III, IV, and V; oxime copolymers IV and V; and acetal - methyl alcohol copolymer III. The polymer samples were ground together with a quantity of KBr and then pressed into tablets. The spectra were taken with a UR-10 spectrophotometer. The spectral regions studied were 3100 to 2700 cm^{-1} and 2000 to 700 cm^{-1}.

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SEVCHENKO, A. N. et al, Zhurnal Prikladnoy Spektroskopii, Vol 13, No 4, Oct 1970, p 633-638

The ir spectra of S, FS, and PFS are analyzed, compared, and interpreted in detail. The ir absorption spectra are plotted and presented in the form of curves. Numerous bands are identified and related to specific bond vibrations and atomic groups.

The authors thank L. K. Burykina for assistance in preparing the samples. Orig. art. has 4 figs. and 7 refs.

2/2

1/2 009 UNCLASSIFIED PROCESSING DATE--30OCT70

TITLE--INITIATED DECARBOXYLATION OF MERCURY SALTS OF CYCLOHEXANE AND CYCLOPENTANECARBOXYLIC ACIDS. SYNTHESIS OF CYCLOHEXYL AND

AUTHOR-(03)-OLDEKOP, YU.A., MAYER, N.A., BUTKO, YU.D.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 641-4

DATE PUBLISHED----------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANOMERCURY COMPOUND, CYCLOHEXANE, CYCLOPENTANE, CARBOXYLIC ACID, ORGANIC SYNTHESIS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/0927 STEP NO--UR/0079/70/040/003/0641/0644

CIRC ACCESSION NO--AP0124588

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--30OCT70

2/2 009

CIRC ACCESSION NO--AP0124588

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. ADDG. A SOLN. OF PEROXIDE (CYCLOHEXANOYL, BENZOYL, ACETYL) TO REFLUXING SOLN. OF HG DIACYLATE IN C SUB6 H SUB6 AND HEATING DURING GAS EVOLUTION, OR A SIMILAR REACTION RUN IN UV LIGHT, RESULTED IN DECARBOXYLATION OF THE HG SALTS TO FORM CYCLOALKYLMERCURY SALTS. THE BEST YIELDS (92-3PERCENT) WERE OBTAINED WHEN THE PEROXIDE USED HAD THE SAME ORG. RADICAL AS THE HG SALT. THUS WERE OBTAINED SALTS OF CYCLOPENTYL, AND CYCLOHEXYLMERCURY. ALSO FORMED WERE MINOR AMOUNTS OF HG(I) SALTS, HG, AND SALTS OF PHHG. WHEN AC SUB2 O SUB2 WAS USED, 23-9PERCENT MEHG SALTS WERE ISOLATED. THE DECARBOXYLATION IS A CHAIN REACTION COURSE AND THE CHAIN LENGTH IS SIMILAR FOR REACTIONS IWTH BZ SUB2 O SUB2 AND AC SUB2 O SUB2.

FACILITY: INST. FIZ. ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 016 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--INITIATED DECARBOXYLATION OF MERCURIC VALERATE, CAPROATE, AND CAPRATE. SYNTHESIS OF N BUTYL, N AMYL, AND N NONYLMERCURY COMPOUNDS -U-
AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., ERDMAN, A.A., DZHOMIDAVA, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(3), 637-41

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DECARBOXYLATION, ORGANOMERCURY COMPOUND, UV LIGHT, ORGANIC PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1472 STEP NO--UR/0079/70/040/003/0637/0641

CIRC ACCESSION NO--AP0135142

UNCLASSIFIED

2/2 018 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0135142

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HG(II) VALERATE (I) CAPROATE (II), AND CAPRATE (III), ARE DECARBOXYLATED BY UV LIGHT OR ACYL PEROXIDES TO FORM SALTS OF ALKYL MERCURY IN GOOD YIELDS. (I), M. 96DEGREES (II), M. 104DEGREES, (III), M. 112-13DEGREES. HEATING 10G I WITH 10 G VALEROYL PEROXIDE AND 200 G BUCO SUB2 H AT 97-80EGREES UNTIL GAS EVOLUTION CEASED (1 HR) GAVE MAINLY CO SUB2, TRACES OF BUTENES, AND SOME C SUB4 H SUB10 IN THE EFFLUENT GASES; THE RESIDUE GAVE 75.1PERCENT BUHG SALTS, 12.3PERCENT HG PRIME POSITIVE, 12.6PERCENT HG PRIME2 POSITIVE. TO HG 5 AND BUCO SUB2 H 100 WAS ADDED HNO SUB3 0.8 AND, OVER 15 MIN 30PERCENT H SUB2 O SUB2 12 MILLIMOLES, THE MIXT. STIRRED 0.5 HR AT ROOM TEMP. AND 0.5 HR AT 85DEGREES, TO FORM A CLEAR SOLN. FREE OF HG OR HG(I) SALTS, AND CONCD. TO GIVE 99.5PERCENT I. SUCH A SOLN. AFTER REMOVAL OF MOST OF THE SOLVENT WAS TREATED WITH 1.5 MILLIMOLES DRY NA VALERATE AND 42 MILLIMOLES VALERIC ANHYDRIDE, COOLED TO MINUS 5DEGREES AND TREATED WITH 12 MILLIMOLES 60PERCENT H SUB2 O SUB2, KEPT 40 MIN, RAPIDLY HEATED TO 98DEGREES, KEPT 1 HR DURING GAS EVOLUTION, FILTERED TO REMOVE 0.05 G HG, AND CONCD. TO YIELD, AFTER ADDN. OF KCL, 92.8PERCENT BUHGCL; ACIDIFICATION OF THE FILTRATE GAVE ON TREATMENT WITH H SUB2 S 0.02 G HGS. SIMILAR REACTIONS WITH SOLN. OF II, USING CAPROIC ACID DERIVS., GAVE 94.4PERCENT N C SUB5 H SUB11 HGCL. SIMILARLY WAS PREPD. A SOLN. OF BUTYLMERCURY VALERATE, WHICH WAS CONCD., TAKEN UP IN ACOH AND H SUB2 O, AND TREATED WITH 25PERCENT NH SUB4 OH AND H SUB2 S TO YIELD 75PERCENT BU SUB2 HG; SIMILARLY WAS PREPD. 69PERCENT IN C SUB5 H SUB11)SUB2 HG.

FACILITY: INST. FIZ. ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--13NOV70

TITLE--HOMOLYTIC REARRANGEMENT OF BETA,BETA,BETA,TRICHLOROETHYL AND ALPHA,BETA,BETA,BETA,TETRACHLOROETHYL INTO

AUTHOR-(02)-OLDEKOP, YU.A., KABERDIN, R.V.

COUNTRY OF INFO--USSR

SOURCE--ZH. ORG. KHIM. 1970, 6(5), 1114-15

DATE PUBLISHED-------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DIMERIZATION, THERMAL DECOMPOSITION, CHLORINATED ORGANIC COMPOUND, GAS CHROMATOGRAPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3006/1285 STEP NO--UR/0366/70/006/005/1114/1115

CIRC ACCESSION NO--AP0134959

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--13NOV70

2/2 015

CIRC ACCESSION NO--AP0134959

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE THERMAL DECOMPN. OF AC SUB2 O SUB2 GIVES ME. WHICH ABSTRACTS H. FROM MECCL SUB3 OR CH SUB2 CLCCL SUB3 GIVING .CH SUB2 CCL SUB3 OR .CHCLCCL SUB3. THESE RADICALS REARRANGE TO CH SUB2 CLC.CL SUB2 AND CHCL SUB2 C.CL SUB2, RESP., WHICH DIMERIZE TO CH SUB2 CLCCL SUB2 CCL SUB2 CH SUB2 CL (I) AND CHCL SUB2 CCL SUB2 CCL SUB2 CHCL SUB2 (II), RESP. BESIDES I, GAS CHROMATOG. SHOWED ALSO THE PRESENCE OF CCL SUB3 CH SUB2 CL AND MECCL SUB2 CCL SUB2 ME. IN THE CASE OF II H SUB2 C:CCL SUB2 AND CL SUB2 C:CHCL WERE FORMED.

FACILITY: INST. FIZ.-ORG. KHIM., MINSK, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--INITIATION OF THE DECARBOXYLATION OF MERCURIC ENANTHATE, CAPRYLATE, AND PELARGONATE. SYNTHESIS OF C SUB6 THROUGH C SUB8 N, ALKYL MERCURY

AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., ERDMAN, A.A., STANOVAYA, S.S.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 305-8

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY, PHYSICS

TOPIC TAGS--DECARBOXYLATION, ORGANOMERCURY COMPOUND, ORGANIC PEROXIDE, UV LIGHT, CHAIN REACTION

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1407 STEP NO--UR/0079/70/040/002/0305/0308

CIRC ACCESSION NO--AP0101497

UNCLASSIFIED

UNCLASSIFIED PROCESSING DATE--18SEP70

2/2 020

CIRC ACCESSION NO--AP0101497

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING (RC O SUB2) SUB2 HG (ENANTHATE, CAPRYALTE OR PELARGONATE) WITH ENANTHOYL PEROXIDE, BZ SUB2 O SUB2, CAPRYLOYL PEROXIDE OR PELARGONYL PEROXIDE 1-10 HR AT 80DEGREES OR EXPOSURE OF THESE SYSTEMS TO UV LIGHT RESULTED IN DECARBOXYLATION OF THE SALTS TO FORM THE CORRESPONDING ALKYL MERCURY SALTS. IN THIS MANNER 40 TO 93PERCENT YIELDS OF ALKYLMERCURY SALTS WERE OBTAINED (HEXYL, HEPTYL AND OCTYL) ALONG WITH LESSER YIELDS OF SALTS OF PHENYLMERCURY, SMALLER AMTS. MERCUROUS SALTS AND MERCURIC SALTS, MINOR AMTS. HG AND APPROPRIATE AMTS. CO SUB2. THE DECARBOXYLATION APPEARS TO BE A CHAIN REACTION. REFLUXING THE HG DIACYLATE IN C SUB6 H SUB6 6 HR GAVE 38 TO 56PERCENT PHENYLMERCURY SALT, FREE OF ALKYLMERCURY SALTS. CONVERTED TO THE HALIDES THESE WERE ISOLATED AS: PHHGCL, M. 250DEGREES, PHHGBR, M. 272 TO 5DRGREES. SIMILARLY WERE ISOLATED C SUB6 H SUB13 HGCL, M. 124DEGREES; BROMIDE, M. 121DEGREES; C SUB7 H SUB15 HGBR, M. 114DEGREES, AND C SUB8 H SUB17 HGCL, M. 115DEGREES.

UNCLASSIFIED

1/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--ACYL PEROXIDES. XXVIII. REACTIONS OF VALEROYL AND CAPROYL PEROXIDES WITH MERCUROUS SALTS -U-

AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., PSHENICHNYY, V.N., IZMAYLOVA, A.F.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2), 308-11

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--ORGANIC PEROXIDE, ORGANOMERCURY COMPOUND, THERMAL DECOMPOSITION, BUTANE, BUTENE, HEAT EFFECT

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1408 STEP NO--UR/0079/70/040/002/0308/0311

CIRC ACCESSION NO--AP0101498

UNCLASSIFIED

2/2 021 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101498

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HEATING VALEROYL PEROXIDE (I) WITH MERCUROUS VALERATE OR BENZOATE IN C SUB6 H SUB6 AT 80DEGREES OR IN BUCO SUB2 H (AT 98DEGREES), OR HEATING CAPROYL PEROXIDE (II) IN MERCUROUS CAPROATE OR BENZOATE IN C SUB6 H SUB6 OR IN CAPRDIC ACID, RESULTED LARGELY IN FORMATION OF 30 TO 40PERCENT HG AND UP TO 32PERCENT CORRESPONDING ALKYLMERCURY SALTS. ALSO FORMED WERE CO SUB2, THE ALKANE AND ALKENE CORRESPONDING TO THE RADICAL OF THE PEROXIDE EMPLOYED, WITH CO, AND MERCUROUS SALTS. THE NEEDED MERCUROUS VALERATE WAS PREPD. FROM MERCUROUS NITRATE AND NA VALERATE IN AQ. MEDIUM. THUS, THE REACTION OF THE RADICALS R TIMES FROM THE PEROXIDE WITH MERCUROUS ACYLATES YIELD RHGO SUB2 CR'. REACTION OF I WITH THE MERCUROUS SALTS GAVE BUHG SALTS, INDICATING THAT THE BU TMES RADICALS FORMED IN THE PEROXIDIC DECOMPN. ARE ABLE TO REACT WITH MERCUROUS SALTS AS INDICATED ABOVE. THESE RADICALS ALSO UNDERGO THE USUAL DISPROPORTIONATION AND CLEAVAGE OF H ATOMS FOR THE SOLVENT; IN THESE REACTIONS BUTANE GREATLY EXCEEDED BUTENES IN THE REACTION MIXT. IN REACTION OF II WITH THE MERCUROUS CAPROATE IN C SUB6 H SUB6, THE YIELD OF CO SUB2 WAS ALWAYS GREATER THAN FOUND FOR OTHER REACTIONS OF PEROXIDES WITH OTHER MERCUROUS SALTS; THE SOURCE OF THE ADDED CO SUB2 WAS MERCUROUS CAPROATE, WHICH WITH PEROXIDE GAVE CO SUB2 PLUS C SUB5 H SUB11 HGO SUB2 C SUB5 H SUB11.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

TITLE--DECARBOXYLATION OF MERCURIC BUTYRATE AND THE INFLUENCE OF PEROXIDES. SYNTHESIS OF PROPYLMERCURY COMPOUNDS -U-

AUTHOR-(04)-OLDEKOP, YU.A., MAYER, N.A., ERDMAN, A.A., OZHOMIDAYA, YU.A.

COUNTRY OF INFO--USSR

SOURCE--ZH. OBSHCH. KHIM. 1970, 40(2) 300-5

DATE PUBLISHED--------70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--DECARBOXYLATION, ORGANOMERCURY COMPOUND, PEROXIDE, CHEMICAL SYNTHESIS, CHAIN REACTION, ACETATE, PROPIONATE, BENZOYL PEROXIDE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1985/1409 STEP NO--UR/0079/70/040/002/0300/0305

CIRC ACCESSION NO--AP0101499

UNCLASSIFIED

2/2 015 UNCLASSIFIED PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0101499

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE RESULTING PRODUCTS FORM REACTION OF MERCURIC BUTYRATE (I) WITH BZ SUB2 O SUB2 AND (PRCO SUB2) SUB2 IN C SUB6 H SUB6, PRCO SUB2 H AND MECN WERE TABULATED UNDER A VARIETY OF CONDITIONS AND REACTANT RATIOS. THE MAJOR PRODUCTS WERE THE APPROPRIATE PROPYLMERCURY SALTS (II), FOLLOWED IN ORDER BY PHENYLMERCURY SALTS, MERCURIC SALTS, CO SUB2, AND SMALL AMTS. CO, C SUB3 H SUB6, C SUB3 H SUB8, AND LITTLE IF AN HG. IN ALL CASES I IS DECARBOXYLATED TO FORM UP TO 92PERCENT II; IN PRCO SUB2 H AND C SUB6 H SUB6 THE REACTION HAS A CHAIN MECHANISM. FOR SYNTHESIS OF I THE SCHEME DEVELOPED WAS SIMILAR TO THAT USED EARLIER FOR THE ACETATE AND THE PROPIONATE (O. ET AL., 1969). SIMILAR REACTION OF 40 HG, 400 PRCO SUB2 H, 3 HNO SUB3 AND 60 MILLIMOLES H SUB2 O SUB2 IN THE 1ST STEP, FOLLOWED BY 500 (PRCO SUB2) SUB2, 80 H SUB2 O SUB2 AND 6 MILLIMOLES PRCO SUB2 NA IN THE 2ND STEP, EVAPN. OF THE SOLVENT, ADDN. OF 30 ML ACOH AND 500 ML H SUB2 O, NEUTRALIZATION WITH NH SUB4 OH, AND SATN. WITH H SUB2 S GAVE 86PERCENT PRHGS, WHICH HEATED AT 130 TO 80DEGREES GAVE 69.8PERCENT PR SUB2 HG, B SUB13 78 TO 80DEGREES.

UNCLASSIFIED

Vacuum Tubes

USSR UDC 621.385.632.12

LOSHAKOV, L.N., [illegible] YE.B. [Members, Scientific-Technical Society Of Radio Engineering, Electronics, And Communication imeni A.S. Popov]

"Distribution Of Longitudinal Electrical Field In Electron Stream Of TWT"

Radiotekhnika, Vol 27, No 6, June 1972, pp 90-92

Abstract: The transverse structure of a longitudinal electrical field in an electron stream is established for two regimes in the amplification region of a TWT. The data obtained are useful for development of an analysis of the operation of a TWT. 2 fig. 2 ref. 1 tab. Received, 16 June 1970.

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OLDUROVA S.V.

J-9979 103

CLINICAL USE OF CORISE BLOOD PRESERVED (pp 73-75)
IN A SACCHAROSE AND LEVOMYCETIN SOLUTION

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To date the saccharose-glucose-phosphate solution has been the universally accepted compound for the preservation of cadaveric blood. However, this solution has many shortcomings: its structure is complex and preserves cadaveric blood in terms of the hemolytic indication for no more than 14 days. At the blood conservation laboratory of LOLIK a simple solution for the preservation of cadaveric blood was developed (S. V. Olurova and L. A. Suvorova). It includes saccharose and levomycetin. It enables us to preserve the blood in its full value over a longer period of time than the one possible with saccharose-glucose-phosphate solution. The saccharose preserving agent contains 110 grams of saccharose and 0.15 grams of levomycetin in bidistilled water. Each 60 ml of preserved blood requires 20 ml of the solution.

In vitro experiments showed that with a saccharose solution, concealed hemolysis of the blood showed up after 7-8 days; it gradually increased and by the 21th day did not exceed an average of 0.4 percent. In blood preserved in a saccharose-glucose-phosphate solution (control), hidden hemolysis appeared earlier and, by the end of the study, reached 1.6 percent in terms of the total blood hemolysis. The increase in the number of spherocytes, characterizing the pre-hemolytic state of the erythrocytes also took place less intensely in the case of blood preserved according to the new method; by the 28th day of storage, it did not exceed 10 percent (compared with 20-25 percent in the control solution).

The values of the maximal and minimal osmotic resistance of the erythrocytes in freshly-prepared cadaveric blood, both in the experiment and the control solution, were similar. In the course of the preservation, changes were detected toward minimal osmotic resistance of erythrocytes which, from 0.60 (experiment) and 0.62 (control solution) during the first day of preservation, gradually increased [illegible] study. No noticeable changes were detected in terms of maximal osmotic resistance of erythrocytes. The pH count indicated that the blood preserved in a saccharose solution is less acid than in the control solution. It was noted that in the process of preservation of Cadaveric blood, as well as in the canning of donor blood, the potassium content in the plasma increased. According to our data, it increased more intensely in blood preserved in a saccharose-glucose-phosphate solution than in a saccharose solution.

Military Medical Journal

USSR UDC 615.387.073.916

OLDUROVA, S. V., and GOLUBEVA, V. L., Laboratory of Blood Conservation of the Central Institute of Hematology and Blood Transfusion of the Ministry of Health USSR, Moscow

"Investigation of the Acclimatization of Erythrocytes of Blood Preserved by the TsOLIPK 12A Formula (Cr^{51} Label)"

Moscow, Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 7-11

Abstract: Post-transfusion viability of erythrocytes was determined by the isotope method, with the erythrocytes labeled with Cr^{51} as a tracer, in order to reveal more fully the characteristics of blood stabilized in TsOLIPK 12A solution. Because the blood is intended primarily for extracorporeal circulation, the viability of its erythrocytes after 5 days in storage was investigated. A special glucose-phosphate preserving solution with citric acid was used to prepare the blood. Twenty-four hours following the transfusion the acclimatized erythrocytes of the blood amounted to 91.6 percent, demonstrating that a 5-day storage period had no significant effect on their viability. An increase of latent hemolysis up to 0.6% of total blood hemolysis and an increase in the number of osmotically fragile erythrocytes were observed on the 15th day of storage of the experimental blood. One day after transfusion

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OLDUROVA, S. V., and GOLUBEVA, V. L., Problemy Gematologii i Perelivaniya Krovi, Vol 16, No 8, 1971, pp 7-11

87.3% of the erythrocytes of such blood survived. After 19-21 days of keeping the blood in storage, the erythrocytes become somewhat less stable, some being destroyed as early as in the first 24 hours following transfusion. Results of the studies demonstrate that erythrocutes of blood prepared with glucose-phosphate solutions have a longer survival period that do erythrocytes of glucose-citrate blood after a similar length in storage. Thus, blood preserved by the TsOLIPK 12A formula is perfectly good after 5 days in storage from the point of view of erythrocyte viability for use in extra-corporeal circulation.

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SUVOROVA, I. A., PAFOMOV, G. A., and OLDUROVA, S. V.

"Clinical Use of Cadaver Blood Preserved With Sucrose and Levomycetin"

Moscow, Voyenno-Meditsinskiy Zhurnal, No 2, 1971, pp 73-75

Abstract: In the Central Order of Lenin Institute of Hematology and Blood Transfusion, the authors developed a preservative for cadaver blood consisting of 100 g of sucrose and 0.15 g of levomycetin (chloramphenicol) in double distilled water (20 ml of the solution is added to 80 ml of blood). In vitro experiments showed that such blood can be safely stored as long as 28 days. Only one of 74 patients who received transfusions of cadaver blood with the authors' preservative for anemia, shick, gastrointentinal, gynecological or other diseases had a mild reaction. Reports from three other Moscow hospitals (Sklifosovskiy First Aid Institute, Central Institute of Traumatology and Orthopedics, and City Hospital No 53) showed that only 1% of 2,991 transfusions of blood so preserved (250 to 1,500 ml, stored for 7 to 21 days) Produced mild or moderate reactions. There were no severe reactions or complications. The effects of the transfusions were beneficial in all cases.

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UDC 615.384.014.41

SUKHOVA, A. G., and OLDUROVA, S. V., Laboratory of Blood Preservation, Central Institute of Hematology and Blood Transfusion, Ministry of Health USSR, Moscow

"The Effect of Inorganic Phosphorus Added to the Preservative on the ATP Content in Preserved Blood Stored for Long Periods"

Moscow, Problemy Gematologii i Perelivaniya Krovi, No 3, 1970, pp 20-24

Abstract: A study was made to determine the effect of inorganic phosphorus added to the preservative on the adenosine triphosphate (ATP) content in preserved blood stored for long periods. Blood prepared with a glucose-phosphate preservative containing citric acid was studied. The test objects were plasma, whole blood and erythrocytes obtained by blood centrifugation. Analogous investigations of blood samples preserved with glucose-citrate solution, but not containing phosphate, served as control. Results of the investigations are presented in two figures which show the dynamics of inorganic phosphorus and of ATP in plasma, in erythrocytes and in whole blood. Studies showed that during prolonged preservation of blood, with addition of inorganic phosphate, and storage at 4-6°C, inorganic phosphorus penetrates the erythrocytes, and participates in the carbohydrate-phosphorus metabolism of these cells. Inorganic phosphorus is used in the process of phosphorylation for formation of ATP, as a result of which the glycolysis period in erythrocytes is increased.

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1/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

TITLE--EFFECT OF INORGANIC PHOSPHATE ADDED TO THE PRESERVATIVE ON THE ATP CONTENT OF THE BLOOD STORED FOR PROLONGED PERIODS OF TIME -U-

AUTHOR-(02)-SUKHOVA, A.G., GLUKOVA, S.V.

COUNTRY OF INFO--USSR

SOURCE--PROBL. GEMATOL. PERELIV. KROVI 1970, 15(3), 20-4

DATE PUBLISHED-------70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--STORED BLOOD, PHOSPHATE, BLOOD PRESERVATION, ADENOSINE TRIPHOSPHATE, ERYTHROCYTE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--3007/0114 STEP NO--UR/9080/70/015/003/0020/0024

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UNCLASSIFIED

2/2 022 UNCLASSIFIED PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0135011

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. INCRG. PHOSPHATE (I) WAS ADDED TO A FINAL CONCN. OF 12 MG PERCENT TO WHOLE BLOOD, BLOOD PLASMA, AND ERYTHROCYTES STORED IN A DEXTROSE PHOSPHATE SOLN. WITH CITRIC ACID. INORG. P AND ATP WERE DETD. DURING 28 DAYS AFTER THE ADDN. OF I. DURING THE STORAGE OF THE BLOOD OR ERYTHROCYTES AT 4-6DEGREES, THE INROG. P LEVEL IN THE PLASMA DECREASED AND THAT IN ERYTHROCYTES INCREASED. MIAX. VALUES IN ERYTHROCYTES WERE FOUND IN THE 9TH TO THE 14 DAY. INCREASED ATP CONTENTS WERE FOUND IN ERYTHROCYTES IN THE 1ST HR AFTER THE ADDN. OF I AND PERSISTED UNTIL THE 7TH DAY. IT WAS CONCLUDED THAT EVEN AT LOW TEMP. I PENETRATES INTO ERYTHROCYTES AND TAKES PART IN THE PHOSPHORYLATION. FACILITY: LAB. KONSERV. KROVI, TSENT. INST. GEMATOL. PERELIV., KROVI, MOSCOW, USSR.

UNCLASSIFIED

1/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70
TITLE--EVALUATION OF THE VIABILITY OF ERYTHROCYTES OF CADAVER BLOOD BY THE ISOTOPE METHOD CHROMIUM 51 -U-
AUTHOR-(04)-SUVOROVA, I.A., PAFOMOV, G.A., TALSKAYA, I.N., OLOUROVA, S.V.

COUNTRY OF INFO--USSR

SOURCE--PROBL GEMATOL PERELIV KROVI 15(4): 26-28. 1970.

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SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--CADAVER BLOOD, ERYTHROCYTE, BLOOD PRESERVATION, CHROMIUM ISOTOPE

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
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CIRC ACCESSION NO--AP0140623
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2/2 020 UNCLASSIFIED PROCESSING DATE--04DEC70

CIRC ACCESSION NO--AP0140623

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. AN ASSESSMENT OF VIABILITY OF ERYTHROCYTES OF CADAVER BLOOD WAS MADE BY LABELING WITH CR PRIME51. THE NEW METHOD OF PRESERVATION OF CADAVER BLOOD WITH THE SACCHAROSE SOLUTION PROVIDED (ACCORDING TO THE DATA INVIVO) GOOD PRESERVATION OF ITS FORMED ELEMENTS: 24 HR AFTER THE TRANSFUSION TO THE RECIPIENT SURVIVAL OF ERYTHROCYTES OF 10 DAY BLOOD AVERAGED 81PERCENT. FACILITY: LAB. BLOOD PRESERV., CENT. INST. HEMATOL., BLOOD TRANSFUS., MIN. HEALTH USSR, MOSCOW, USSR.

UNCLASSIFIED

1/2 033 UNCLASSIFIED PROCESSING DATE--23OCT70

TITLE--TENSOMETER FOR MEASURING THE DEFORMATIONS OF PLASTICS DURING CYCLIC EXTENSION COMPRESSION -U-

AUTHOR--OLDYREV, P.P.

COUNTRY OF INFO--USSR

SOURCE--ZAVOD. LAB. 1970, 36(2), 238-40

DATE PUBLISHED--------70

SUBJECT AREAS--MATERIALS, METHODS AND EQUIPMENT

TOPIC TAGS--TENSOMETER, PATENT, PLASTIC DEFORMATION, CYCLIC STRESS, DYNAMIC STRESS, GLASS CLOTH, LAMINATED PLASTIC

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAME--1997/0730 STEP NO--UR/0032/70/036/002/0238/0240

CIRC ACCESSION NO--AP0119637

UNCLASSIFIED

2/2 033 UNCLASSIFIED PROCESSING DATE--23OCT7(
CIRC ACCESSION NO--AP0119637
ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE APP. (U.S.S.R. 198,771) DETERMINES CYCLIC DEFORMATIONS OF GLASS CLOTH LAMINATES WITH 2-3PERCENT ACCURACY. IT CAN BE USED IN STRESS STRAIN STUDIES UNDER STATIC OR DYNAMIC (SMALLER THAN OR EQUAL TO 1500 CYCLES MIN) CONDITIONS.
FACILITY: INST. MEKH. POLIM., RIGA, USSR.

UNCLASSIFIED

USSR

UDC 615.917:547:495.2-099:612.017.1

OLEFIR, A. I., Candidate of Medical Sciences, Kiev Institute of Labor Hygiene and Occupational Diseases

"The Effects of Chronic Intoxication With Carbamate Pesticides on Immunoreactivity and Resistance to Infections"

Kiev, Vrachebnoye Delo, No 8, pp 137-141

Abstract: The effects of carbamate pesticides on the immune system were investigated on 146 white rats (110-120 g) that received the following pesticides for 4.5 months, 5 times per week (drug dosages correspond to 1/20 LD_{50}): carbin (26 mg/kg), sevin (36 mg/kg), dicresyl (20 mg/kg), thiocarbamic eptam (84 mg/kg), yalan (33 mg/kg), tyllam (56 mg/kg), dithiocarbamic acid maneb (150 mg/kg), and TMTD [expansion unknown] (37 mg/kg = 1/50 LD_{50}). Humoral immunity was found to be depressed by all of the agents tested (complement levels, lysozyme, beta lysin, serum bactericidal activity), while significant depression of cellular immunity was observed after tyllam and TMTD administration (phagocytic activity of neutrophils and reticuloendothelial cells). Resistance to infections was tested by injection of E. coli or pathogenic staphylococci under aponeurosis. The experimental

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OLEFIR, A. I., Vrachebnoye Delo, No 8, pp 137-141

animals evidenced decreased resistance to infection with both bacteria. Depression of the nonspecific immune response and general resistance to infection was found to persist for two months following discontinuation of the drugs.